

REMARKS

Favorable reconsideration and allowance of the subject application are respectfully requested in view of the following remarks.

Summary of the Office Action

Claim 5 stands rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement.

Claims 5-6 and 11-17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,916,873 to Yamanoto et al.

Summary of the Response to the Office Action

Applicants have amended claim 5 and canceled claim 17 without prejudice or disclaimer in response to Section 112 rejection. Also, Applicants respectfully submit that the rejection of claims 5-6 and 11-16 under 35 U.S.C. § 103(a) is improper and therefore should be withdrawn. Accordingly, claims 5-7 and 11-16 remain pending in this application for further consideration.

Rejection under 35 U.S.C. § 112, First Paragraph

Claim 5 stands rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. Applicants have amended claim 5 in view of the Examiner's comments set forth in Section 2 of the Office Action. Accordingly, Applicants respectfully assert that the rejection under 35 U.S.C. § 112, first paragraph, be withdrawn.

All Claims Define Allowable Subject Matter

Claims 5-6 and 11-17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,916,873 to Yamanoto et al. Applicants respectfully traverse the rejection for at least the following reasons.

With regard to independent claim 5, as newly-amended, Applicants respectfully submit that Yamanoto et al. does not teach or suggest the claimed combination, including at least a recited feature of “wherein the plated through-hole has a diameter between 50 μm and 200 μm .”

The present invention is to provide a filling material which, when applied into a through-hole, secures improved adhesion to a conductor layer provided thereon. As described in lines 11-16 of page 11 of the specification for example, “[t]he effects of the present invention, namely, the improved adhesion between the filling material and the conductor layer covering the exposed surface of the filling material and the resultant advantages are particularly outstanding where the through-holes and the conductor layers have the above-recited preferred dimensions.” That is, the preferred dimension is between 50 μm and 200 μm .

In contrast to the present invention of newly-amended independent claim 5, Yamanoto et al. merely discloses, in col. 14, lines 52-54 for example, that the diameter of the through hole 3 is 0.3 mm (300 μm). Yamanoto et al. is completely silent as to whether or not the size of the through hole 3 could bring about the improved adhesion. In other words, Applicants respectfully submit that Yamanoto et al. fails to teach or suggest the claimed combination, including at least the feature of “wherein the plated through-hole has a diameter between 50 μm and 200 μm ,” as recited by newly-amended independent claim 5.

Moreover, The resin composition of Yamamoto et al. basically contains ground filler (crushed filler), and therefore, if the diameter of the through-hole is made smaller as in the amended claim 5 of the present application, a trouble (problem) is expected to be caused for filling the through-hole. In contrast, the substantially spherical filler as defined in canceled claim 17 (which has been incorporated into claim 5) is used in the present invention so that the diameter of the through-hole can be made smaller (thus, from 50 μm to 200 μm).

In Yamamoto et al., if the diameter of the through-hole is small as in the amended claim 5 of the present application and the filling material is cured with a nonuniform composition, the adhesiveness to the plating tends to be deteriorated. In the present invention, as recited at lines 1 to 4 in page 9 of the specification, if the filler has the shape and size as defined in claim 17, the filling material can be filled into the through-holes of small diameter (from 50 μm to 200 μm) without clogging. The filling material of the present invention is cured with a uniform composition so that the problem on the adhesiveness is not caused.

MPEP § 2143.03 instructs that "[t]o establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. In re Royka, 409 F.2d 981, 180 U SPQ 580 (CCPA 1974)." Applicants respectfully submit that the applied reference does not teach or suggest each or every feature of the present invention of newly-amended independent claim 5. Moreover, the rejection of its dependent claims 6 and 11-16 should also be withdrawn for at least the same reasons as discussed above with regard to independent claim 5 and for the additional features that they recite.

Without other rejections pending, Applicants respectfully assert that claims 5-6 and 11-16 are in condition for allowance.

CONCLUSION

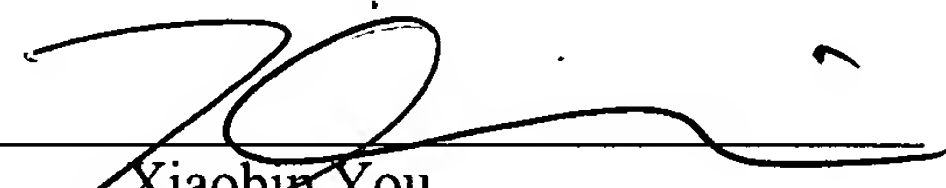
In view of the foregoing, Applicants respectfully request entry of the amendments, reconsideration and the timely allowance of all pending claims. Should the Examiner feel that there are any issues outstanding after consideration of this response, the Examiner is invited to contact Applicants' undersigned representative to expedite prosecution.

If there are any other fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 50-0310. If a fee is required for an extension of time under 37 C.F.R. § 1.136 not accounted for above, such as an extension is requested and the fee should also be charged to our Deposit Account.

Respectfully submitted,

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